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the reachability information in the IP header 203. In this embodiment, no label distribution protocol (e.g. MPLS) is required. In another embodiment, the packet may include a first header and a second header.

In the Claims

A clean version of the entire set of pending claims as amended by this Response is presented on the following page.

Claims 8, 10, 16, and 21 are amended as indicated by a marked up version of the rewritten claims, which follows the remarks, showing all the changes relative to the previous version of the claims.

Clean Version of the Entire Set of Pending Claim

- 1 1. A router comprising:
 - 2 a) a first port for receiving a packet having a label, a header and a
 - 3 payload;
 - 4 b) a table associated with the label; and
 - 5 c) a processor for processing the packet in accordance with the table.
- 1 2. The router as recited by claim 1 wherein in the table is a route table.
- 1 3. The router as recited by claim 1 wherein the table is a forwarding table.
- 1 4. The router as recited by claim 1 wherein the label identifies a virtual private
2 network.

1 5. The router as recited by claim 1 further having a second port for
2 transmitting said packet.

1 6. The router as recited by claim 1 wherein the header is an internet protocol
2 header.

1 7. The router as recited by claim 1 wherein the label comprising information
2 identifying a virtual private network and a forwarding label.

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1 8. (Amended) A method of routing in a network comprising:
2 a) maintaining a first table corresponding to a first virtual private network;
3 b) maintaining a second table corresponding to a second virtual private network;
4 and
5 c) routing a packet based on the first table or the second table.

1 9. The method as recited by claim 8 wherein the first table and the
2 second table are route tables.

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1 10. (Amended) The method as recited by claim 8 wherein the first table and the
2 second table are forwarding tables.

1 11. The method as recited by claim 9 further comprising the step of
2 maintaining forwarding table indexable by a virtual private network
3 identifier.

1 12. The method as recited by claim 8 wherein the packet comprises a
2 label, a header and a payload.

1 13. The method as recited by claim 8 wherein the label comprises
2 information identifying a virtual private network.

1 14. The method as recited by claim 8 wherein the label comprises
2 information identifying a virtual private network and a forwarding label.

1 15. The method as recited by claim 9 wherein the first table or the second
2 route table is chosen for routing the packet based on the label.

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1 16. (Amended) A method of routing in a network comprising:
2 a) maintaining a first forwarding table corresponding to a first virtual private network;
3 b) maintaining a second forwarding table corresponding to a second virtual private
4 network; and
5 c) routing a packet based on the first forwarding table or the
6 forwarding table.

1 17. The method as recited by claim 16 wherein the packet comprises a label, a
2 header and a payload.

1 18. The method as recited by claim 16 wherein the label comprises
2 information identifying a virtual private network.

1 19. The method as recited by claim 16 wherein the label comprises
2 information identifying a virtual private network and a forwarding label.

1 20. The method as recited by claim 16 wherein the first table or the
2 second table is chosen for routing the packet based on the label.

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1 21. (Amended) A network comprising:
2 a) a first edge router coupled to receive a packet having a header to transmit into a
3 wide area network cloud a modified packet having a label and the header;
4 b) a backbone router coupled to receive the modified packet and route the modified
5 packet based on a route table associated with the label; and
6 c) a second edge router coupled to receive the modified packet.

1 22. The network as recited by claim 21 wherein the label comprises
2 information identifying a virtual private network.

1 23. The network as recited by claim 21 wherein the label comprises
2 information identifying a virtual private network and a forwarding label.

1 24. The network as recited by claim 21 wherein the backbone router comprises a
2 second route table.

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1 25. (New) The network as recited by claim 21 wherein the modified packet further
2 includes,

3 a second label identifying a forwarding table corresponding to the virtual
4 private network, the forwarding table including a portion of the route table.

1 26. (New) A method of routing a packet comprising:

- 2 a) identifying, by a label, a packet including the label, a header and a
3 payload destined for a virtual private network (VPN);
4 b) identifying, from the label, a routing table associated with the VPN; and
5 c) facilitating routing of the packet to the VPN.

1 27. (New) The method of claim 26, wherein the label includes a virtual private
2 network identifier.

1 28. (New) The method of claim 26, wherein the routing of the packet is based on
2 information in the header.

1 29. (New) The method of claim 28 further comprising:
2 identifying, from a second label, a forwarding table corresponding to the VPN,
3 the forwarding table including a portion of the routing table.

1 30. (New) The method of claim 29 further comprising:
2 identifying, from the forwarding table, label switching information for routing
3 the packet to the VPN.

1 31. (New) The method of claim 30, wherein routing of the packet is based on
2 information in the forwarding table.

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- 1 32. (New) The method of claim 26 wherein the label includes a forwarding label
 - 2 corresponding to a forwarding table.
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